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ABSTRACT

A nationally standardized dropout definition will be of little practical value unless it can be related to the structure, practices, and processes of a given school. A proposed measure of school completion and school leaving called the High School Holding Power Index is described. The index is built on these assumptions: (1) there is a relationship between what goes on at school and the dropout rate; (2) conditions beyond the control of the school contribute to some dropout decisions; (3) the graduating class cohort is the appropriate unit of analysis; (4) high school is defined as grades nine through 12; (5) the appropriate period for measurement is the high school years; (6) a dropout is a student who cannot be accounted for in any legitimate way when the class reaches the end of 12th grade; and (7) holding power is the percentage of students in each graduating class cohort who graduate or are still enrolled when the cohort finishes grade 12. The index equals (on-time graduates plus early graduates plus those still enrolled) divided by (the original ninth-grade class plus "transfer ins" minus "transfer outs" plus the institutionalized plus the jailed plus the deceased). This index offers a way to measure the breadth and depth of the dropout phenomenon. The studies, involving over 31,000 students, that resulted in the development of the index are described. There is a 56-item list of references. (SLD)

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CALCULATING DROPOUT RATES LOCALLY AND NATIONALLY WITH THE HOLDING POWER INDEX

by

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April 1992

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CALCULATING THE DROPOUT RATE LOCALLY AND NATIONALLY WITH THE HOLDING POWER INDEX

Confusion now hath made his masterpiece!
-Macbeth

A significant number of young adults do not graduate from high school with their classmates, a situation of concern both to the nation and to the local educators who work with these youngsters. National attention to the problems of education in the last decade has documented the dropout rate as a substanial problem in the United States with serious implications for the individual student and for the society as a whole (Kominski, 1990; LeCompte and Dworkin, 1992; Mann, 1987; National Center for Educational Statistics, 1991).

The estimates of early school leaving range from 2 percent to 30 percent nationally, depending on the methods used to calculate the figures. Estimates of students lost are even higher when urban schools are viewed as a separate data set (Tugend, 1985; Rohter, 1985; Wehlage, 1983) and when particular minority groups are singled out for examination (Holly and Doss, 1983; Orum, 1984; Peterkin, 1992; Rumberger, 1983; S. B. Williams, 1987). The problem is serious.

Dropping out has negative effects on the young people who do it, and their collective experiences damage the quality of their own lives and the life of the nation (Alexander, et al., 1985; Beck and Muia, 1980; Catterall,

1987; Jordan-Davis, 1984; Levin, 1972; Natriello, et al., 1986; Ransom, 1986). There is more to dropping out than individual self-esteem problems, illiteracy, unemployability, lower paying jobs, and the likelihood of involvement in crime. As Rumberger (1987) points out, citing work done by Levin (1972), students lost to schooling ultimately translate to losses in national income, losses in tax revenues which are needed to support the social services for which there is increased demand by people unable to support themselves, increases in crime, reduction in political participation, and lower health levels. From a financial viewpoint alone, the figures are staggering. Catterall (1985, 1987) estimates that the dropouts from each graduating class will cost the nation over $200 billion in wages unearned and taxes unpaid through each year of their lives.

The sociological costs are also frightening. Dropouts are not equally distributed across the various groups that make up American society. Greater dropout rates among minorities contribute to greater unemployment, crime, dissatisfaction, and separation of classes. The dropout problem, over time, can contribute to the erosion of social unity.

NEED FOR A NATIONAL DEFINITION OF DROPOUTS

As serious as we know the problem to be, and even with all of the effort put into investigating it to date, we do not have a clear understanding of its dimensions at either a national or local level. Attention to dropouts by

researchers and governmental agencies has revealed that there is at best only a clouded view of exactly how bad the problem is or how it might be affected by the way schools operate. Reviews of published studies indicate the absence of a universal dropout definition and the absence of any standardized method of data collection and analysis (Kominski, 1990; MacMillan, et al., 1990; Morrow, 1986; National Education Goals Panel, 1991; Rumberger, 1987).

Though some researchers (e.g., MacMillan, et al., 1990; Morrow, 1986; P. A. Williams, 1987) have explored the conceptual and methodological difficulties in defining terms and suggested parameters (e.g., time frame, grade levels, cohorts, baseline populations, etc.) that might help educators and government officials to establish a research approach and agenda, none of these suggestions has been adopted or imposed, and ambiguity about the issue continues.

The National Education Goals Panel (1991) recently reported that there was no agreement among states as to who is a graduate, who is a dropout, or even who is a student. The panel concluded that, under the current data collection systems, no one can tell what proportion of students entering the ninth grade in the fall of any given year have actually completed high school four years later.

It could hardly be otherwise. The absence of agreement on what constitutes a "dropout" and how dropout rates should be computed is illustrated in the literature. For example, Hammack's (1987) study of large school systems found dropout

rates to be calculated differently and the formulae employed to include different data from district to district. This echoed what Casserly (1986) found in a study of dropout definitions and calculations for the Council of Great City Schools. Barber and McClellan (1987) surveyed 17 large-city school districts regarding methods of determining a dropout figure. They found 33 different definitions in use, with over 60 different codings of reasons why students did not finish high school.

State dropout figures are determined by the aggregated figures from individual districts, and district figures are compiled from those of the individual schools. A good example of the confusion present in attempts to determine dropout rates at the state level is found in McKay's (1992) recent survey of high school administrators in Nebraska. Slightly more than half responded that they used a formula based on the number of students who left each year. Seven percent reported calculating the rate on the number of students who left school during a four-year span. In both cases, a dropout was defined only as a student who did not have a transcript forwarded to another school. The most significant result, however, was that 40 percent of the administrators indicated that they did not have a procedure in place for calculating the dropout rate in their schools.

In a description of the problem of determining national statistics, Kominski (1990) identified the presence of at least four fundamentally different approaches to dropout

counting. One takes a macro approach and compares the number of students in the ninth grade in any given year to the number of high school graduates four years later, something of an age cohort measure. A second and even more global method is to determine the ratio of high school graduates at the end of a given year to the best estimate of the number of 17 year-olds in the country at start of the year. A third way is to try to derive a figure from the pool of dropouts rather than from the pool of students and graduates. That is, to estimate the number of young people of a given age who are not enrolled in a school and are not yet high school graduates. A fourth method has been to review the longitudinal data from the High School and Beyond study to determine how many were lost between the initial interviews in 1980 and the final interviews in 1982.

Taken together, these and other studies support the observation Rumberger (1987:103) made after reviewing more than 50 dropout studies:

> In fact, no one knows what the high school dropout rate really is in the United States. That is because there is no consensus definition of a high school dropout, nor is there a standard method for computing the dropout rate.

The problem is further compounded by the fact that few incentives exist for accurate record keeping on dropouts. School funding is often based on enrollment figures, and adjustments are made in response to school-generated attendance reports. This can create a conflict of interest between accurate reporting and adequate funding (Mann, 1987;

Mirochnik and McCaul, 1990). Hammack (1987) argues that dropout rates reported by school districts, and even by individual schools, must be viewed by administrators and researchers with skepticism.

Standardization of definition, data collection, and analysis would allow reconciliation of many of the conflicting results generated by the multiplicity of methods currently employed to determine dropout numbers and dropout rates. That, in turn, would allow educators and researchers to develope a picture of American education more accurate than anything we have now.

Without standardization of definition and methodology, at least three things are apparent: (1) a truly accurate picture of the extent and dynamics of the problem cannot be generated (Morrow, 1986); (2) comparative studies are impossible (Hammack, 1987; MacMillan, et al., 1990); and (3) methods of addressing the problem are difficult to develop and evaluate (LeCompte and Goebel, 1987; MacMillan, et al., 1990). A nationally standardized definition and analysis system would improve the knowledge base and interpretative capacity of county, state, and federal agencies, and furnish useful data for sociologists, economists, political scientists, and cultural anthropologists.

NEED FOR A BUILDING LEVEL DEFINITION OF DROPOUTS

As valuable as national standardization of dropout investigations would be, however, it would generate little

practical information to help site administrators improve the day-to-day operation of their schools. Dropout information reported at the state and national levels will define the dimensions and extent of the problem for policy makers at those levels, but the legislative halls are not the arenas in which the potential and actual student dropout will be confronted. Aggregated state and national dropout figures will do little to help individual district and building administrators plan their particular strategies.

Given the history of the last three decades, it seems almost certain that the individual secondary school will be expected to assume responsibility for finding a solution to the dropout problem. As with desegregation, ethnic and gender understanding, children's health issues, drug abuse prevention, and other public concerns, the problem will be engaged in local schools. While discussions will be held in national and state forums about how education is succeeding or failing in its duty to keep students in school, it will be at the local building that the responsibility for interacting with the individual at risk student will rest.

Military history, political campaigns, and the lessons of the business world teach us that successful strategies are rarely planned without accurate information. Administrators in each high school building must be able to identify individuals and members of specific groups the students they lose in the course of four years. Without this information, school administrators will not be able to target

particular types of students for additional attention. Nor will they be able to evaluate how changes in policy, organization, curriculum, or practice affect different types of students.

Parallel to the national need for standardization, if the totality of the dropout problem is to be understood, is the need for a local definition, data collection method, and analysis system that will enable high school administrators and faculties to better understand the forces at work in their own buildings and districts. Educators need to identify the groups and subgroups in their own organizations most likely to be at risk of dropping out in order to suggest and measure changes in the structures and practices in their own schools that have an influence on whether students ultimately leave or stay.

Focusing on the activities and statistics of the individual high school is the appropriate place to begin studying and reducing dropout rates nationally. Sizer (1984, 1992), Sirotnik (1989), Goodlad (1975, 1983) and others have argued throughout the reform movement that the individual school site should be the center of inquiry and the focus of improvement. There is growing evidence that high school organizational structures and practices are related to dropout rates.

School structures, for example, were examined by Toles, Schultz, and Rice (1986), who reported a study of over 33,000 students in 63 Chicago high schools. Their findings

suggested that curriculum and attendance boundaries affect graduation and dropout rates. Working with data from the High School and Beyond Study, Wehlage and Rutter (1986) concluded that school size, structure, and climate can be related to the decision to drop out. Looking at both high school structure and practice, Bryk and Thum (1989) identified linkages between school size, academic emphasis, and an orderly social environment with varying dropout rates.

In terms of school practices and their relation to dropouts, studies over the last dozen years have established connections between dropouts and what goes on in schools. Duncan (1980) found that students left school because of dissatisfaction with teachers. Hammons (1987) discovered a strong relationship school initiated inter-school transfers and dropout rates. Shepherd and Smith (1989) produced evidence of a link between the grade retention and dropouts; their comparisons of high school graduates and dropouts found higher rates of repeating a grade among the dropout populations. Reyes and Capper (1991) demonstrated links between principal behavior and minority dropout rates.

In short, how individual high schools are structured and operate has a relationship to whether certain kinds of students graduate from them. As Finn (1989) found in a review of more than 90 studies about behaviors and characteristics associated with early school withdrawal, relationships between dropouts and school characteristics are demonstrable.

To meet the challenge of dealing with the preventable loss of students in their schools, as in dealing with any school-related problem, administrators need specific and significant information about their own students and their own building operations and performance. Unfortunately, a review of the dropout literature offers few useful suggestions to high school administrators about how to gather this information. The literature is full of discussions and research about the dropout problem in general, but does not reveal any programs offering systematic approaches at data analysis with the intent of relating them to particular characteristics of individual school structure and operation.

The commitment to lowering the dropout rate is a legitimate national-level need. National-level figures alone, however, are not enough. A nationally standardized definition of "dropout" will yield little significant information and be of little practical value to educators in the field, those who will be expected to respond to whatever the new and more accurate statistic implies, unless it can be related directly to the structure, practices, and processes of a given school.

THE HIGH SCHOOL "HOLDING POWER" APPROACH

This paper describes a proposed measure of school completion and school leaving called the "High School Holding Power Index." It is our belief that the system

outlined below can address both the national need for a standardized dropout definition and the local school need for data on individual students and student groups within a single high school. Information gathered through the Holding Power approach can be aggregated for district, state and national use, even though its form and content reflect the processes evolving and the events taking place in individual buildings. The Holding Power approach offers enrollment, departure, graduation, and dropout data analysis which can be related directly to the differing characteristics of students in a given building and to the structures and practices which define that building.

Assumptions of the Holding Power Concept.

The Holding Power idea is built upon seven basic assumptions:

(1) There is a relationship between what goes on in a high school and the dropout rate;

(2) There are conditions in the lives of some students that contribute to the decision to drop out and these conditions are beyond the control of the school;

(3) The graduating class cohort is the appropriate unit of analysis in calculating dropout rates and in computing the Holding Power of a high school;

(4) The definition of "high school" is grades 9-12;

(5) The appropriate time frame for measuring dropout rates and a high school's Holding Power is the four years during which each graduating class cohort passes through a high school.

(6) A "dropout" is that student who cannot be accounted for in any legitimate way at the time his or her graduating class reaches the end of the twelfth grade; and

(7) The definition of a high school's Holding Power is the percentage of students in each graduating class cohort, including those who constitute the original membership of the cohort at the start of the ninth grade and those who subsequently transfer in, who graduate or are still enrolled when the cohort finishes grade 12.

Assumptions 1 and 2. The first two assumptions are interwoven. The Holding Power concept maintains that there is a relationship between what goes on at a high school and the percentage of students who graduate from that high school. At the same time, it takes into account what research has demonstrated: there are situations and conditions in students' lives beyond the control of the

school that may lead to dropping out (Barro and Kolstad, 1987; Ekstrom, et al., 1986; Fine, 1986; Rumberger, 1983). In measuring the effectiveness of the school in "holding" students through to graduation, those situations and conditions must be separated out from the situations and conditions the school is able to control.

School officials should be responsible and accountable for students who drop out because of poor or poorly implemented policies or practices, but they should not be held responsible for failing to meet the needs of students who leave early for legitimate reasons. The Holding Power calculation system tracks students individually and separates these two groups.

Assumptions 3, 4, and 5. The third, fourth, and fifth Holding Power assumptions are similarly interwoven: the cohort is the appropriate unit of analysis; the life of the cohort is the years that make up grades 9-12; and the time to measure the cohort's success is as the end of those four years.

The Holding Power approach fits into the category of concept types that Kominski (1990) terms "cohort graduation measures." This type of measure is one of three in that category. The other two are the "graduation ratio measure," which compares the number of high school graduates at the end of a given year with the estimated number of 17 year-olds in the country at the start of that year, and the "dropout pool" measure which estimates the percentages of

people of a given age who are neither enrolled in school nor high school graduates. All three cohort measures are routinely used by the U. S. Department of Education to report national findings.

There is a significant difference, however, between the way the Department of Education and the Holding Power concept approach the measurement of cohort completion. While the federal calculations deal in nameless figures aggregated at state and national levels, the Holding Power process requires the **identification and tracking of students by name** and by a variety of individual characteristics. Additionally, and significantly, its focus is on the local school. Results from individual schools can be aggregated later for district, county, state, or national measurement and analysis, but the initial results are school and student cohort specific.

Beginning with the fundamental assumption that the cohort is the proper unit of analysis, the Holding Power approach defines high school as grades 9 to 12 and the cohort as consisting of students passing through those grades together. This is not a standard practice across the country at this time, something which contributes to the confusion in dropout accounting efforts. California, for example, only looks at students who have "...been enrolled in grade 10, 11, or 12 but who left school prior to graduation..." (California State Department of Education, 1986:3) When mixed with data from other agencies that do

include the ninth grade, the aggregated data are rendered inaccurate.

Another factor which causes inaccuracy and confusion in the computation of dropout rates is inconsistency in the practice of determining exactly when a student should be designated as a dropout. Since there has been no agreement among researchers or practitioners about how long a student should be absent from school to qualify as a dropout, periods of different length have been recommended and adopted in different places. When the collected data are later aggregated, some missing students have been categorized as dropouts who would not have been so designated if they had attended another school.

The literature demonstrates the variations in practice. Recommendations have been made by some (e.g. Morrow, 1986) that any student missing for 15 consecutive days be regarded as a dropout. California declares as a dropout any student who leaves before graduation and "did not, within 45 school days, enter another public or private educational institution or school program, as documented by a written request for a transcript from that institution." (California State Department of Education, 1986:3). Three years ago, 27 states, three territories, and the District of Columbia entered an agreement to use similar definitions and processes in collecting dropout data (Snider, 1989). They agreed to define a dropout as a student who was enrolled in

school during the previous school year but not enrolled at the beginning of the current year.

There could conceivably be a number of reasons why students would drop from sight for a time, and neither such a disappearance nor a student's presence at the end of one year and absence at the beginning of the next necessarily indicates that the student has discontinued his education. Many students leave and re-enter school during the four year period of high school. To count them as dropouts if there is no record of transcript requests at the end of a specified period of time, such as 15 or 45 days, is to ignore the possibilities of delays beyond the control of either the student or of the school he left.

Goebel and LeCompte (1985) relate an example that is illustrative of record keeping faults. In doing a study of dropouts in Houston, they were given a computer-generated list of students who had disappeared from school and were designated as dropouts because their records showed no requests for transfer transcripts. When they manually compared the list against the students' cumulative files at the individual building sites, they found that fully a quarter of those students had been incorrectly categorized. Written transfer requests were found in their folders at the home school, but no acknowledgment of them had been entered into the students' computer records.

The Houston record-keeping problem is probably not unique. Experience in back-tracking student files has shown

us that student records are not always easily retrieveable. In pilot studies of the Holding Power, we encountered schools which purged student records after they were gone from the district for a given period of time. Even if the record does exist, the imperatives of daily school management discourage the extra effort of finding the record and correcting the entry after any length of time, especially if the new information does not involve the student's return to that particular school.

Since the Holding Power concept utilizes the four year graduating class as the unit of analysis, the time to evaluate each cohort's successes and failures is at the end of its course. As Sandburg observed, a tree is best measured when it's down. The Holding Power definition focuses on the tracking of students in a given cohort, and does not require a school to label a student as a dropout previous to the cohort's scheduled graduation date. This allows maximum opportunity to determine if the student actually did drop out and never returned, or if the student resumed his or her education, or if there has been some error in the tranference of the student's records.

By not assigning dropout status until the student's cohort reaches graduation, the Holding Power approach maximizes the possibility of discovering errors. Because each student's status must be entered at the time of graduation in order for the Holding Power Statistic to be generated (see below), there is an incentive for the records

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of missing students to be reviewed. This helps to minimize the possibility of making an error. Students who return to the school they left, or about whom confirmed information is obtained regarding their educational status, are more likely to have their files updated in the Holding Power approach.

The results of research (e.g., Fine, 1986; Kolstad and Owings, 1986; Turner and Abalos, DATE), the comments we have gathered from current high school administrators, and our own personal experience in schools strongly support the contention made by McMillan and his associates (1990:32):

> The connotation that a dropout occurs when the student decides that he or she no longer wishes to attend school and the decision is irrevocable is simply inaccurate. Estimates of dropout rates do not differentiate among the varied paths by which students leave school.

The Holding Power definition makes provision for varying paths, and does not automatically count as a dropout a student who has simply disappeared for an arbitrarily determined and relatively short period of time.

Assumption 6. The Holding Power approach defines as "dropouts" only those high school students who cannot be accounted for in one of the following ways when their class cohort reaches its scheduled graduation date:

- regular graduation
- early graduation
- high school equivalency certificate earned through examination or other district- or state-approved programs

- continued enrollment beyond the fourth year
- transfer to another public or private school
- transfer to an alternative state- or district-approved education program
- transfer to a hospital or other institutional educational program because of physical or mental illness, chemical dependency, or other problems.
- expulsion
- incarceration
- death

Assumption 7. The Holding Power Index describes what proportion of students who **could** be held in school through the life of the graduating class **actually were held** in school. The Holding Power of a school is not the mirror of its dropout rate, but the concepts are related. By utilizing a standard definition of a dropout, a specified time frame, and a baseline population, the Holding Power concept meets Morrow's (1986) requirements for a workable formula. In practice, it exceeds these standards because it also provides a way of tracking increases and decreases in the cohort's population over time, which increases the accuracy of its results. Integrating all these pieces, the Holding Power Index (HPI) of a high school is computed in the following way:

$$HPI = \frac{\text{(ON TIME GRADUATES + EARLY GRADUATES + THOSE STILL ENROLLED)}}{\text{(ORIGINAL 9TH GRADE CLASS + TRANSFER INS) - (TRANSFER OUTS + INSTITUTIONALIZED + JAILED + DIED)}}$$

The Holding Power calculations generate information about what percentage of the entire cohort was held in school and data about which types of students were held through to graduation, and which were not. When students are entered into the cohort master list, whether coming from the eighth grade or as later transfers, their names, ages, genders, races, courses of study, entry dates, and the kinds of schools they came from are also recorded. By cross referencing these characteristics with each student's attendance records, the Holding Power approach allows examination of many different combinations. As a result, administrators are able to identify two important kinds of information: (1) how many and which kinds of students graduate from, leave early for legitimate reasons, stay beyond the four years, or drop out of that school; and (2) what effect changing school structures and practices have on graduation and dropout rates, both overall and for different types of students.

The Holding Power calculations identify a school's holding and dropout rates for each subgroup of students and provide administrators with specific data to suggest what kinds of changes need to be made in their schools to reduce dropout rates and increase holding power. If an

administrator wants to know how well the school is holding Hispanic males in academic programs who transferred in from another comprehensive high school sometime after the start of the freshman year, that kind of information is available.

Over time, information generated by the Holding Power approach can be used comparatively. It can inform administrators of what happens to the graduation rates of entire cohorts or of any subgroups if changes are made in school structures or practices, e.g., counseling services, instructional methods, activity programs, scheduling of the day or year, or other elements of the school's operation.

If the Holding Power approach were to be adopted as an agreed upon national definition, the holding power figures and dropout rates for any and all combinations of students could be pooled and analyzed, as could the results of attempts to improve the figures and rates by restructuring what goes on in schools. The Holding Power approach offers a way to measure the breadth and depth of the dropout phenomenon, and it is also a tool for assessing efforts at decreasing it.

THE EVOLUTION OF THE HOLDING POWER CONCEPT

When you have eliminated the impossible, whatever remains,
however improbable, must be the truth.
- Sherlock Holmes in The Sign of Four

Background.

The Holding Power formula was originally conceived by William Denton of the Dallas Independent Public School District while serving as a member of a Phi Delta Kappa (PDK) committee coordinating PDK's "Study of Students At-Risk." Modified through work by Ruben Carriedo of the San Diego Unified School District, Sharon Johnson-Lewis of the Detroit Public Schools, and Larry Barber, Jack Frymier and Neville Robertson of Phi Delta Kappa, a workable formula was ready for testing in 1988.

The Initial Study. "Holding Power" was originally conceptualized as the proportion of first time ninth-graders who graduated four years later, after accounting for those who transferred to another school, went to jail, or died. This model was distributed to 100 chapters of Phi Delta Kappa across the United States, and each was asked to calculate a Holding Power "statistic" for one high school. Ninety-five chapters completed the project, generating data representing the high school careers of some 27,000 students in the graduating year cohort of 1988.

Calculating the statistic required local researchers in each school to identify by name and identification number:

- All first time ninth grade enrollees in 1984
- All those who graduated in 1988
- All those who graduated before 1988
- All those who had transcripts sent to another school
- All those who went to jail
- All those who died
- All those who were still enrolled in school

After complete information had been obtained for every student who entered ninth grade at that school for the first time in 1984, the Holding Power statistic was computed according to the following formula:

$$H\ P = \frac{\text{1988 GRADUATES + EARLY GRADUATES + STILL ENROLLED}}{\text{ORIGINAL 9TH GRADERS - (TRANSFER OUTS + JAILED + DIED)}}$$

Through this process, a specific Holding Power Statistic for each high school was determined. In the aggregate, the holding power of the 95 schools was 81 percent.

Modifications Based on the Results of the First Study. Based on feedback from school administrators and the Phi Delta Kappa researchers, the Holding Power idea was reconceptualized in 1990 to take into consideration the reality of student turnover in high schools: students transfer in and increase the size of the cohort as well as transfer out and reduce its size. The original conceptualization accounted only for students who entered ninth grade for the

first time in the fall of 1984 and transferred out or who were accounted for in another way. Students who transferred into the cohort group after the opening of the 1984 school year, however, were ignored. The Holding Power concept was redefined to include all students who entered as first-time ninth graders or who transferred into the high school after the opening of the ninth grade. This reflected a more realistic picture of a high school's operation.

Other feedback and analysis by practitioners and researchers suggested the value of collecting information about individual student gender, ethnicity, and course of study. At this point the potential usefulness of the concept to building administrators was recognized.

The Second Study. In January of 1991, a test of the revised concept and formula was initiated, involving 14 schools in six states. The schools varied in size, affluence, the ethnic mix of students, and urban/suburban/rural setting.

In addition to testing the efficacy of the formula, we were interested in two things: (a) how much time and effort were required to collect the data asked for; and (b) whether the instructions accompanying the instrument were sufficiently explicit that whoever might complete the data collection in the school could understand exactly what was sought, how to code it, and how to make the needed calculations. We expected that a principal or assistant

principal would delegate the task of data collection to a member of the clerical staff or even to a parent volunteer.

With these interests in mind, school site officials were asked to assume responsibility for collecting data, but they were not expected to do the work themselves. The goal was to collect data on the cohort group which had entered their buildings as first-time ninth graders in the fall of 1986, using the following data collection list:

- All first time ninth grade enrollees in 1986
- All students who transferred in between the opening of school in 1986 and graduation in 1990
- Each student's gender
- Each student's racial/ethnic category
- Each student's course of study category
- All those who graduated in 1990
- All those who graduated before 1990
- All those who had transcripts sent elsewhere
- All those who went to jail
- All those who died
- All those who were still enrolled in school

This information was then processed through the Holding Power formula:

$$HP = \frac{\text{1990 GRADUATES + EARLY GRADUATES + THOSE STILL ENROLLED}}{\text{(ORIGINAL 9TH GRADERS + TRANSFER INS) - (TRANSFER OUTS + JAILED + DIED)}}$$

The second study involved data on 5,425 students enrolled in schools with cohorts as small as 33 students to as large as 1129, when all transfers were counted. The Holding Power of the individual high schools ranged from a low of 72.2% to a high of 94.5%, with an aggregate holding power of 82.8%. The results of the pilot study appear in Table 1 below.

Table 1

School	Cohort Size	Holding Power
A HS	1129	78.0%
B HS	557	72.2%
H HS	102	83.1%
K HS	539	77.1%
L HS	33	93.1%
McHS	350	78.5%
MCHS	608	93.8%
M HS	40	78.4%
N HS	516	94.5%
RUHS	701	90.7%
RIHS	43	86.2%
S HS	227	78.7%
W HS	434	84.9%
WHHS	146	80.5%
Total	5425	82.8%

Three important things were revealed by the second study: (1) a need to clarify the instructions; (2) the usefulness of the demographic data collected; and (3) the amount of time required to collect data was too great for the approach to be practical.

Instruction Clarification. There was still a need to expand the list of possible reasons why students were no

longer in the school when the time for graduation arrived. Feedback from the practitioners who had done the data collection indicated that there were questions about how to treat information regarding a student who had been institutionalized for drug abuse, had been expelled, or who had legally left school through graduation equivalency programs.

Uses of Demographic Data. The decision to collect data about student gender, ethnicity, and course of study had been a good one. When data analysis began on the results from each of the high schools, it became apparent that significant subcohorts could be identified, tracked, and evaluated. The holding power statistics generated for each subgroup in the cohort contributed to a better understanding of school operation and effectiveness.

Analysis could be conducted on the data for various subgroups, each offering a different perspective on the school. Given the information available, data could be manipulated to allow analysis from a multiplicity of viewpoints. Not only could the holding power for males be compared with females, it was possible to compare holding powers of students by race, course of study, entry date, or by any combination of those characteristics. An administrator wanting to know the school's holding power for African-American girls in vocational programs who entered the ninth grade with the original cohort group as compared to African-American girls in academic programs who entered the school during the sophomore year, could have that information.

When subcohort holding powers like these were calculated, it became apparent that this process identified strengths and weaknesses in each school's success rate with its varying subgroups. Two examples will illustrate. One school among the 14 had a Holding Power of 79.7 for its Anglo population, and of 67.2 for its Hispanic population, a fact somewhat masked by its overall Holding Power of 78.5. Another school had a Holding Power of 98.9 for its academic students, 96.9 for its vocational track students, but only 53.9 for its "general" students. This kind of information highlights segments of the school's curriculum and program needing immediate attention.

Further thought along these lines suggested additional data to be sought in the next study. There was concern, however, about whether the volume and complications of collecting data might not at some point discourage school personnel from participation, given the feedback described below.

The Problem of Time Demands. The time and effort required to retrieve the data on a graduating cohort during the last year of its residency in the school were crippling. Concerns about the amount of time data collection required had been a feature of the first study's results, and the second version of the Holding Power instrument demanded an even greater investment. For many, it was simply too much to justify in light of budget restraints, operational imperatives, and other priorities. While there were 14 high

schools that ultimately took part in the second study, 40 others had indicated an initial interest but later declined to participate. Administrators in those schools cited the number of employee hours it would take to track down the data required as their reason for passing on the opportunity to participate.

It became obvious in studying the feedback from both studies that most schools were not organized to track students by name over time in an efficient, comprehensive, and centralized manner. General practice involves accounting to the state for the number students enrolled at each grade level on a given date, not accounting for students by name or other characteristics, except within specific offices at the school site. Additionally, record keeping may be formalized in those particular offices, but the records are frequently not coordinated in any manner, even in a single building. That is, entrance and withdrawal information may be maintained in the attendance office, while course of study, graduation lists, etc., may well reside in the counseling office. Further, an attendance office record may show that a particular student left the school on a particular date, but the specific reason for the departure, such as expulsion or institutionalization, may be recorded elsewhere. It also may happen that the attendance office lists a student's departure date, but the school registrar may be the only one who knows if a transcript was ever requested by another institution. These and similar situations were re-

ported in both studies and complicated the collection of data. Further compounding the problem were the changes that frequently occur with students during the course of high school: name changes; changes in courses of study; even the transfer of a student into the cohort behind the one he started in because of class failures and credit losses. Methods for recording these were highly inconsistent.

The conclusion was that it was very difficult to go back in time and records to collect data on every student who passed through the school over the four-year period of a cohort's residence. A frequent request from participants in both the first and second studies was to develop a system that would allow a school to start data collection when the cohort started school as ninth graders and go forward with them through the succeeding four years.

Modifications Based on the Results of the Second Study.

The first modification was to add the data below to the collection list for the next study. This information could broaden even further the range of cohort Holding Powers which could be calculated.

- The student's date of birth
- Whether the original members of the ninth grade cohort came into the ninth grade from an eighth grade in the same district as the high school or from one outside

- Whether a student transferring into the high school after the opening of the ninth grade came from another high school in the same district or from one outside
- If a student transferred in from another high school after the start of the ninth grade, whether the transfer was made from a comprehensive high school, vocational or technical school, or alternative high school.

A second modification was to respond to practitioner concerns and delineate further categories of school leaving to include expulsion, institutionalization, and graduation through equivalency examination or other district- or state-approved process.

With the addition of this information to the demographic information which was already part of the program, the power of the Holding Power concept to identify the relationships between subgroup performance and specific school operations was enhanced.

The third and most important modification growing out of the results of the second study, however, was more based in concept than content. Given the feedback received from practitioners about the time and effort demands of the system, we decided to devise an accounting procedure that would provide accurate information in a reasonable time span with minimal difficulty for administrators and office personnel.

Drawing from our own experience and from what others had reported, we shifted our focus from research to conceptual and technical development. During 1991 and 1992, our team of researchers, school administrators, and computer analysts developed the "Holding Power Index," a computer software program designed to simplify the collection of data at the school site and to record the data in the format required by the Statistical Program for Social Science (SPSS) software.

The Holding Power Index software program is designed to initiate cohort specific record keeping with the entry of each new ninth grade class. It will enable a school to file and compile the data necessary for calculating the school's Holding Power in relation to each cohort and its subgroups as the data appears over the four year period the cohort is in the school. The program addresses the practitioners' desire for a system in which collection and organization of information begins at the same time as the cohort is originally constituted. It does nothing about the problems of trying to retrieve information from the past, but simplifies the collection and organization of information in the present for analysis and use in the future.

The computer software that has been developed appears to represent a significant breakthrough. In tests completed to date, the program has proven user-friendly, with sufficient safeguards to prevent the operator from entering information in the wrong place or in the wrong form. An office worker or parent volunteer can enter the original information on a

first-time ninth-grader or entering transfer student in less than thirty seconds; recording student departures takes even less time. Assuming the availability of information at the school site, which should not be a problem when people are consciously seeking it at the time of student entry or departure, there is good reason to believe that these small time demands will be sustained in field use.

A Possible Additional Modification.

In analyzing the results from the second study and considering the variety of configurations of secondary schools in the United States, it became apparent that a given school or district might wish to begin tracking students before the ninth grade. Schools embracing grades 7-12, for example, could find it more convenient to constitute the original cohort at the beginning of the seventh grade rather than at the beginning of the ninth. Further, analysis of the data in such a situation could offer insights into the quality of the junior high or middle school program as well as into the high school program. At the same time, data entered at and after the ninth grade could be separated out for purposes of reporting to state or national agencies.

Another reason for considering the possibility of this modification is found in the growing research on pre-high school dropouts. While there has not been any systematic records kept on these students to date, there is increasing evidence that education might be losing a significant number of them in junior high (Flax, 1991; Hahn and Danzberger,

1987; Houston Independent School District, 1989; Snider, 1989). The federal government has recognized the situation. Beginning in the 1992-1993 school year, the National Center for Education Statistics will start collecting data on students in grades seven and eight.

If the tracking of students in grades 7-12 becomes a national pattern, local school districts will need a means of easy and efficient data collection. The Holding Power software package could fill the need. The transference of student records from junior highs or middle schools feeding into high schools could be electronically accomplished. The merging of data files, followed by a check for duplication, could easily, efficiently, and effectively track students at both the building and district-wide level.

A SUMMARY AND A PROPOSAL

Summary

The premise of this paper has been that the dropout problem in America cannot be effectively dealt with until two needs are satisfied: (1) the dimensions of the problem are identified and clarified at the state, regional, and national level; and (2) the potential dropouts and the groups they belong to are identified and the school-related contributors to the problem are confronted at the local building level. Neither of these needs can be met without the development of an agreed upon definition of a dropout and a standardized system for data collection and analysis.

We believe the Holding Power concept supplies a workable definition, data collection system, and analysis process.

Using the Holding Power system, data from the 16,000 school districts across the 50 states and the District of Columbia could be aggregated and analyzed without the methodological confusion and distortion of results that currently exist. At the same time, building-level administrators can relate student gender, ethnicity, academic program, mobility, and other factors to dropout rates and be able to identify particular target groups for intervention. They can then create or adjust organizational structures and practices to increase the probability of holding these students through to graduation.

A Proposal

While understanding of the dropout problem and strategies for meeting its challenges can be improved to whatever extent individual buildings, districts, and states adopt the method, the greatest benefits will be realized if the method is utilized nationally. National adoption of any system of dropout calculation will take a long time. Politics alone will ensure that. The question then becomes, how can the benefits of the Holding Power approach be maximized in the meantime? We recommend the development of a consortium of high schools. A national consortium of schools with headquarters at the University of Nebraska,

Omaha, could multiply the benefits of the Holding Power system through cooperative effort.

Administrators in member schools would provide the consortium center with enrollment data for graduating class cohorts of students moving through their high schools, along with descriptions of their changing administrative structures and program offerings. Both of these tasks could be easily accomplished. A school could simply send the consortium a copy of the Holding Power software data disk for each graduating class. The cost of a floppy disk is minimum and only a moment is required to load it with the data. Descriptions of school organization, counseling and guidance practices, attendance systems, curriculum, and activities already exist in the reports schools submit to boards of trustees, state agencies, and accrediting institutions. Providing the consortium with up-to-date information would involve only making one more copy of such reports.

Using this information, the university could coordinate analysis, research, and information exchange, serving its members in at least three ways:

First, the university-centered consortium could perform more extensive analysis than could easily be done at the school site level, especially in districts too small to be able to support their own research departments. The deeper analysis of data from individual schools and of data aggregated from all the schools in a district would offer administrators opportunities to gain further insights into

the dropout problem in their specific buildings and systems. This information would inform decision-making at both the building and district level.

Second, at a practical level for improving school effectiveness and success rates, the consortium center could facilitate building a network of member schools by:

- Serving as a clearing house for the exchange of ideas and descriptions of model practices;
- Building a communication system which could put administrators in touch with people at other schools of similar characteristics where there are programs that have been successful with particular subgroups;
- Providing member schools with periodic reviews of new research studies relating to the problems they face;
- Assisting member schools with in-house research projects and coordinating efforts across the membership;
- Developing other services and functions as the ideas emerge.

Third, the collection and analysis of data from schools across the country would allow educators and researchers to discover relationships on a variety of levels in greater scale:

- Comparisons between schools of similar size, funding, and demographics but which employ different structures or practices;
- Develop meaningful state, regional, and national figures on how many and which kinds of students are lost from schools of given sizes, configurations, demographics, etc.
- Discern trends among particular cohorts and subgroups in states, regions, and nationally.

A consortium of schools employing the Holding Power approach could provide services to assist local school administrators in improving their programs, while simultaneously contributing to the development of a national definition of dropouts and a better understanding of the dropout problem.

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